

FIG. 1 is a block diagram of a network system. The network system includes a network 110, a network service appliance 130, and four servers 121, 122, 123, and 124. The network 110 is connected to the network service appliance 130 and the four servers. The network service appliance 130 is connected to the four servers. The network 110 is also connected to three clients 101, 102, and 103.

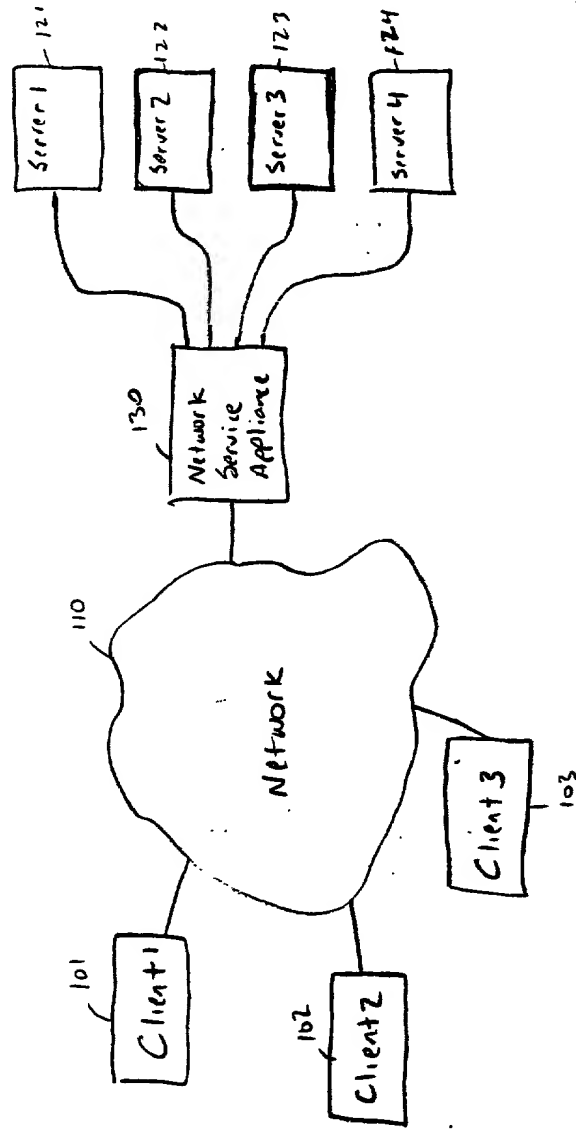


Figure 1

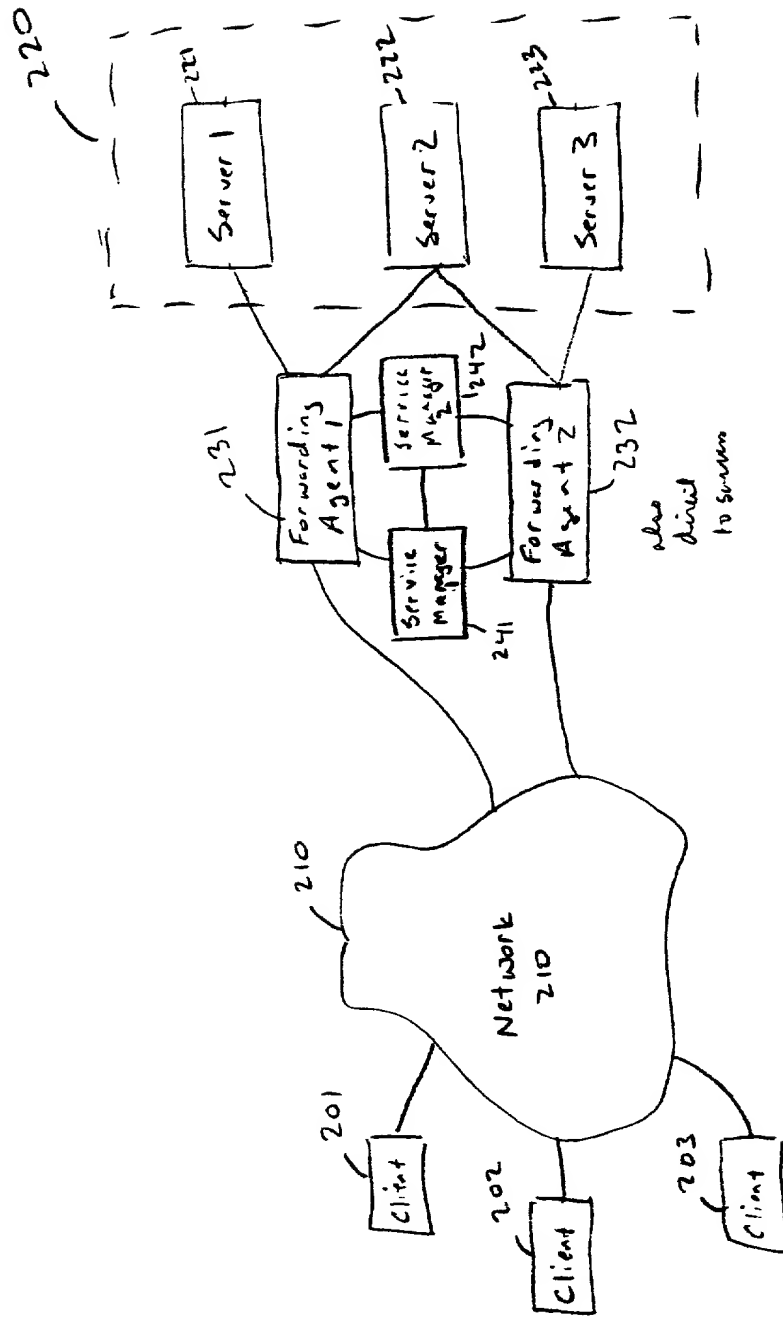


Figure 2A

250
↙

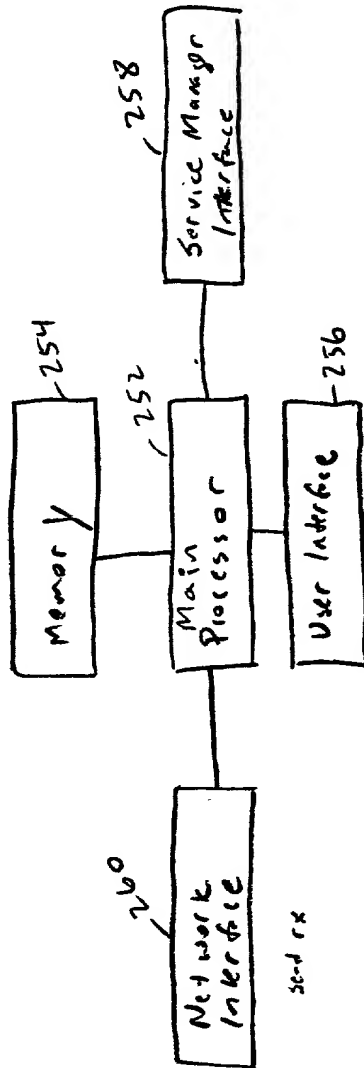


Figure 2B

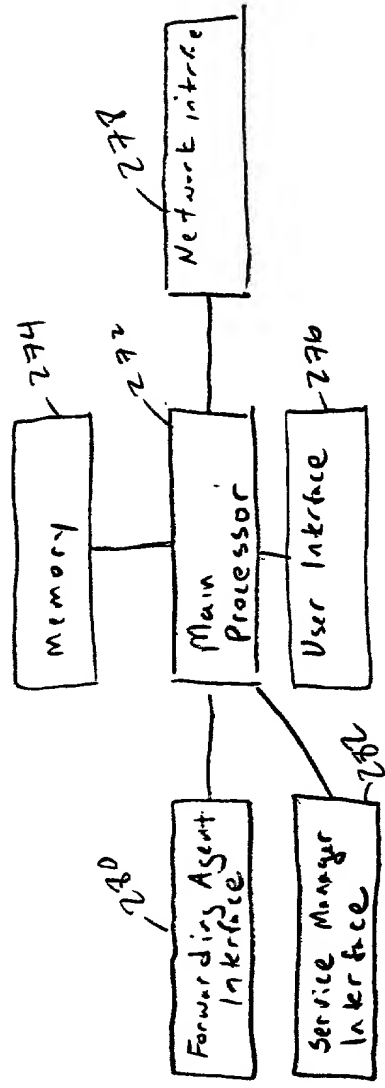


Figure 2c

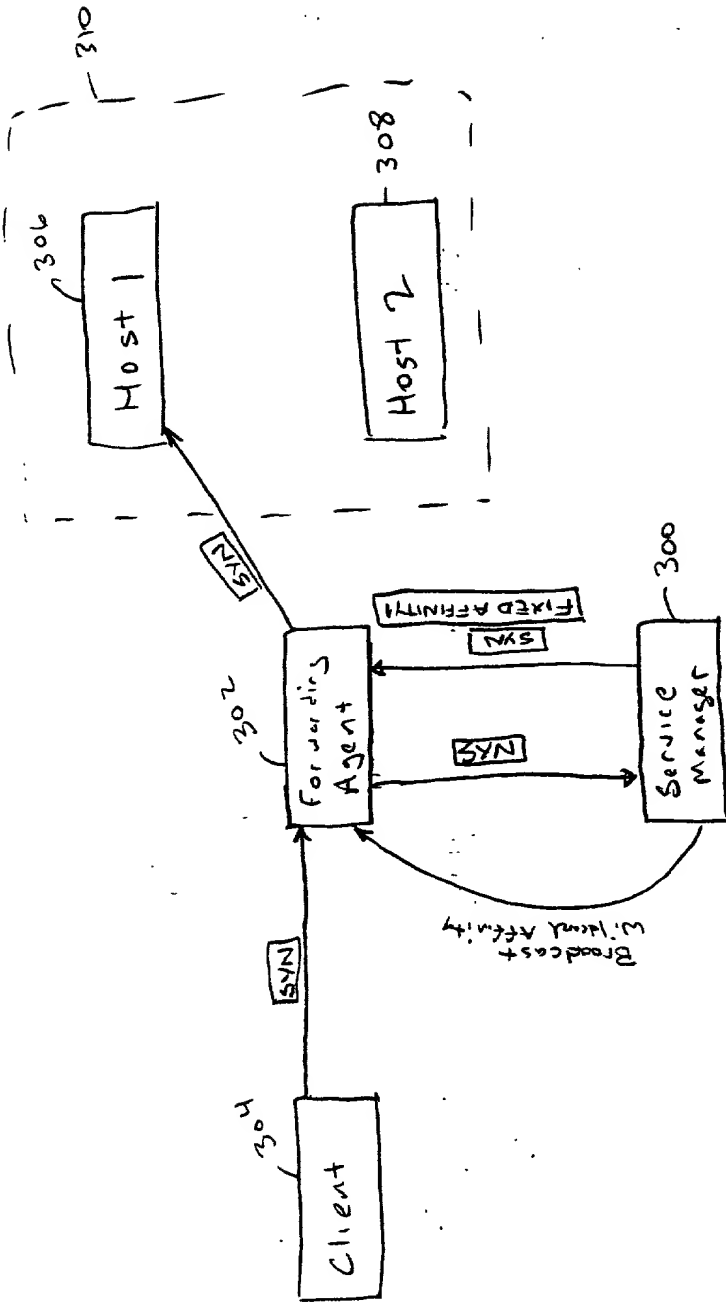


Figure 3A

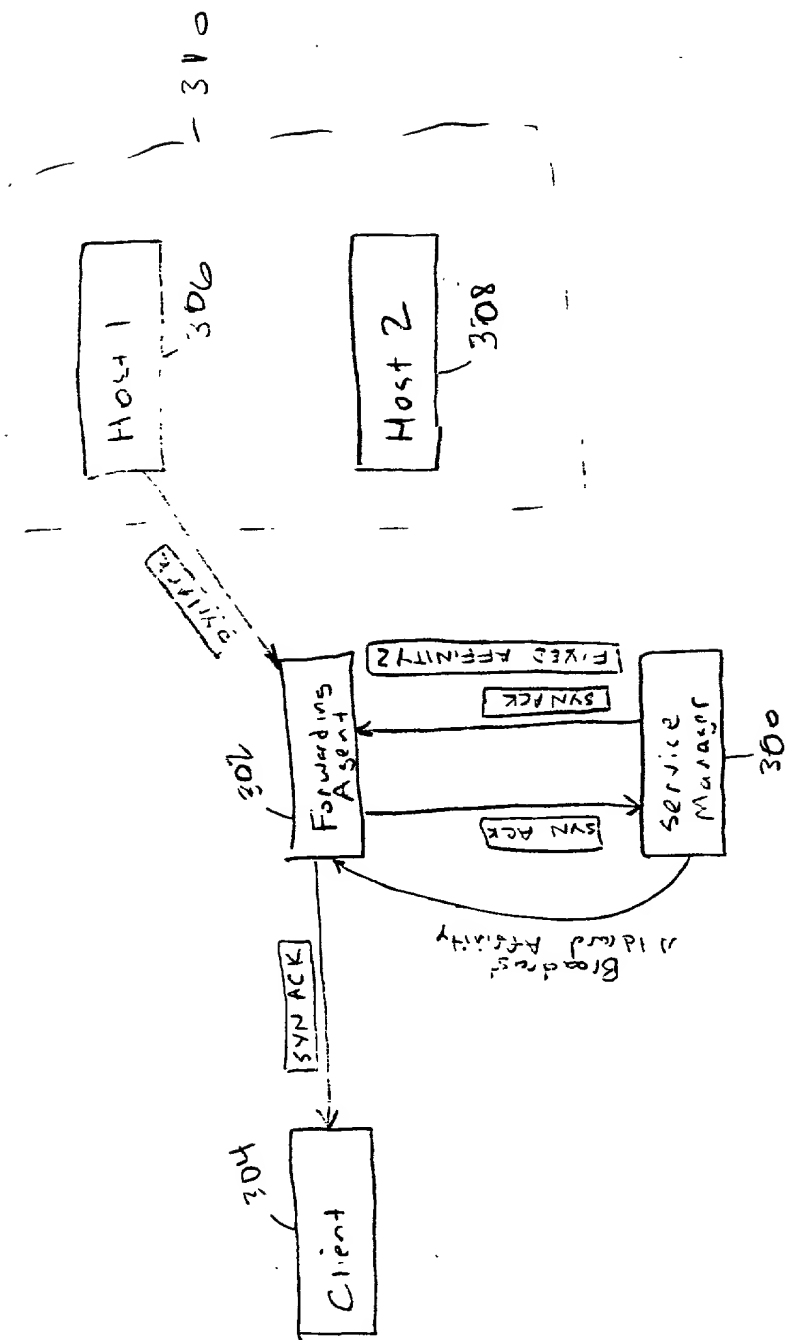


Figure 3B

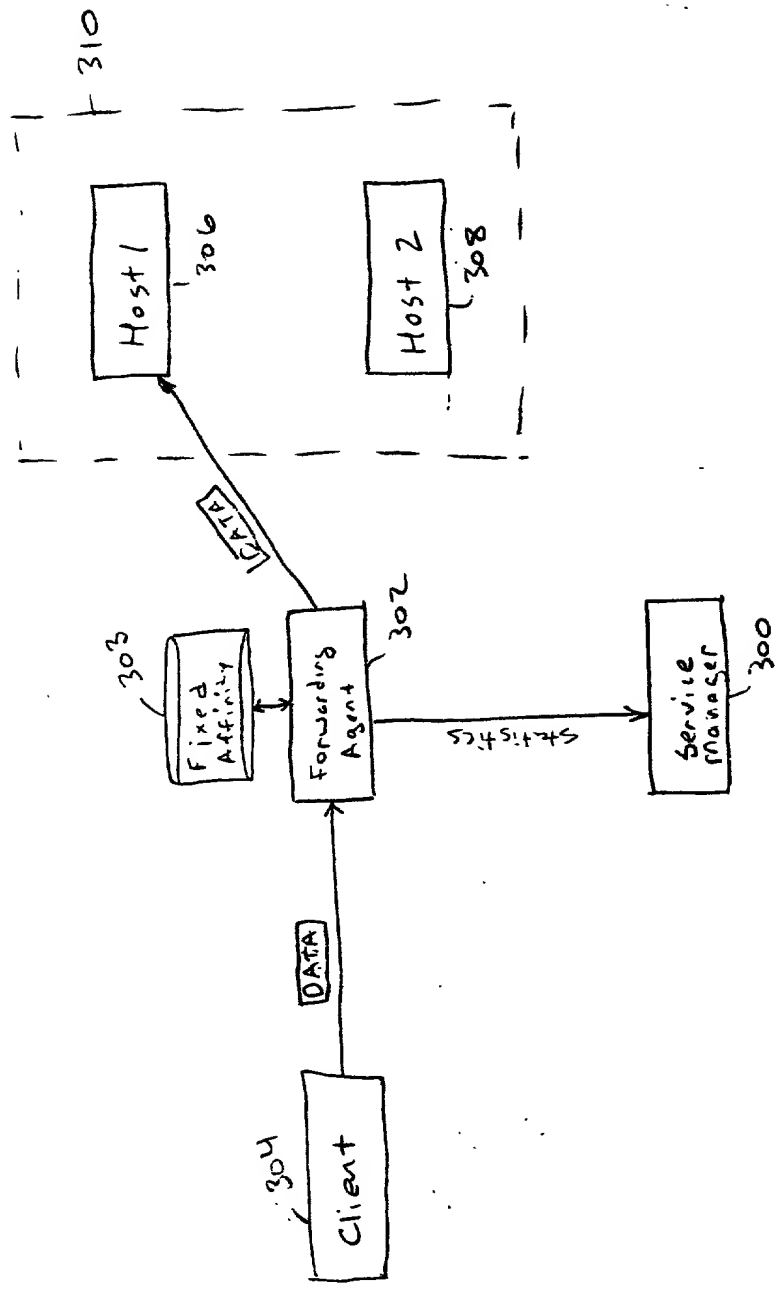


Figure 3C

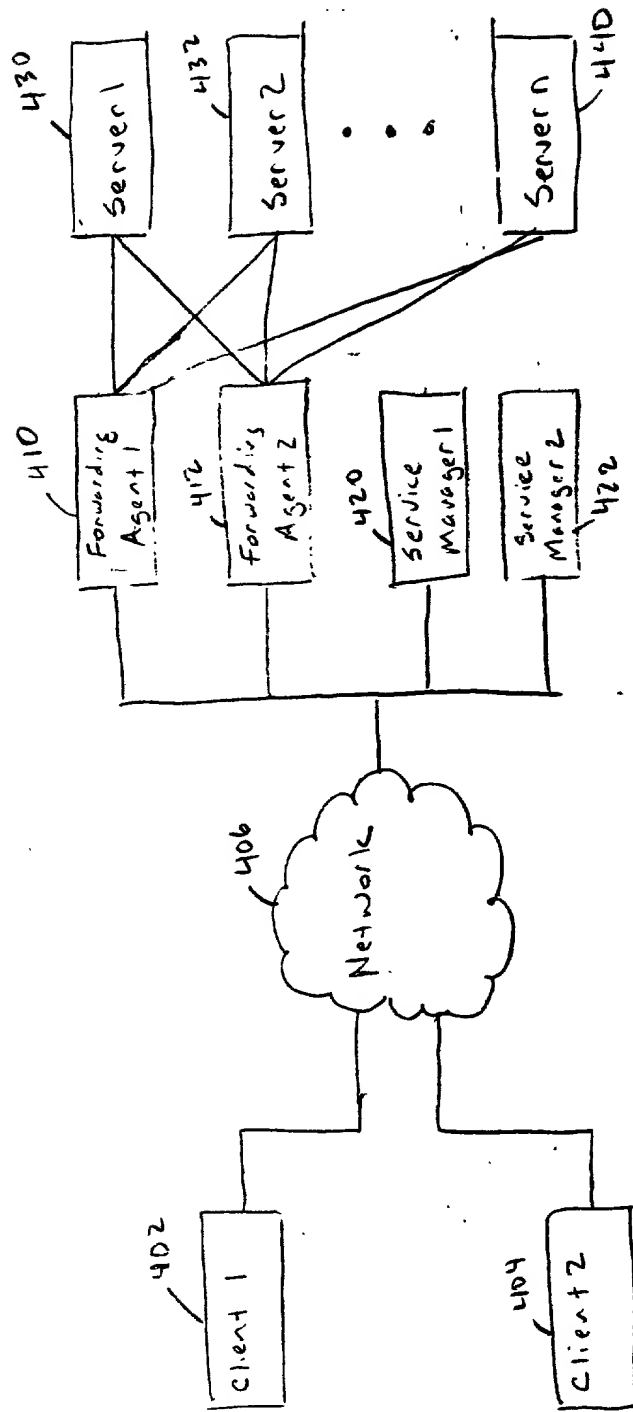


Figure 4

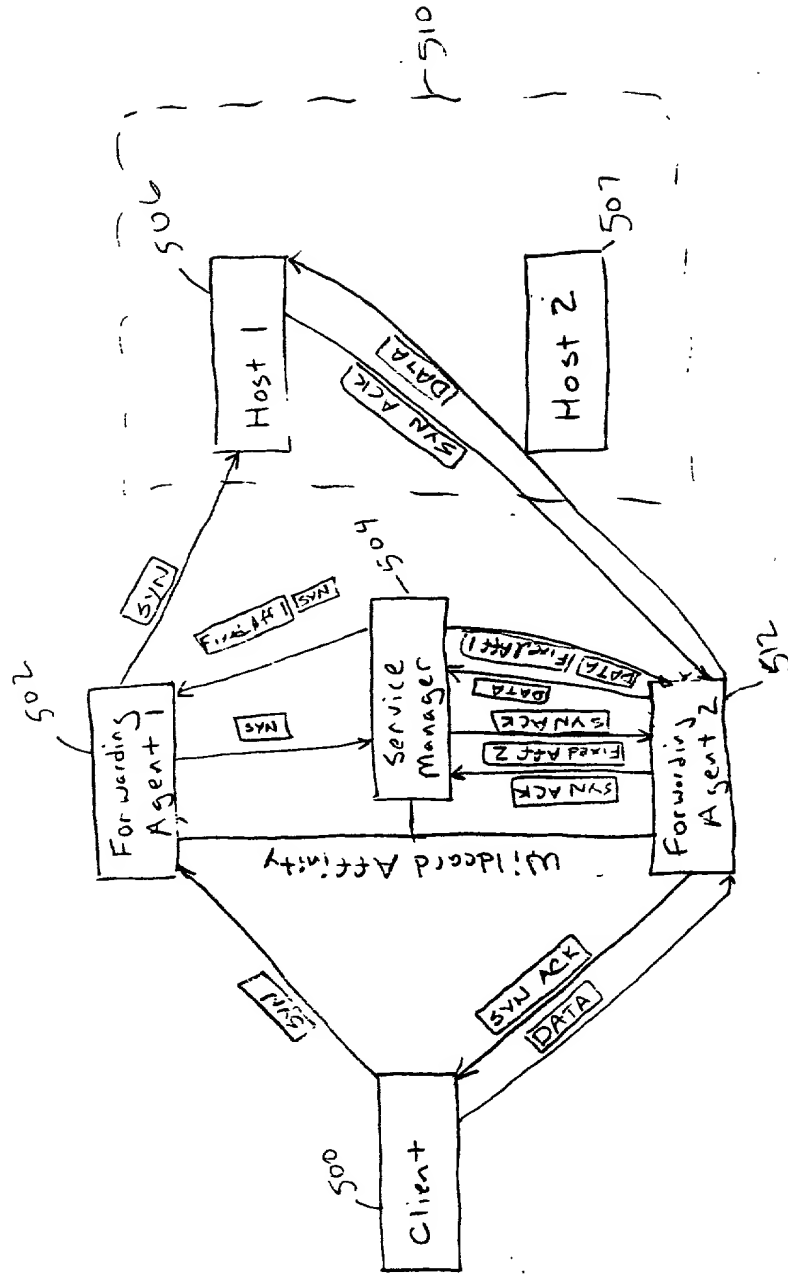


Figure 5

Affinity Key	602
Dispatch Flag	604
Information Flag	606
Forward IP address	608
Time to live	610

↙ 600

Figure 6

700

Dispatch Flag	702
Information Flag	704
Protocol	706
Source IP address	708
Source netmask	710
Destination IP address	712
Destination netmask	714
Source port	716
Destination port	718
Forward IP address	720
Time to live	722

Figure 7

800
←

Protocol version	802
Message type	804

Figure 8A

810
←

Required flag	812
Segment type	814
Segment length	816

Figure 8B

820
←

Security type	822
Security data	824

Figure 8C

Service message header	902
Security segment	903
Wild card affinity	904
Action List	906
Affinity service precedence	908
Backup service precedence	909
Interest data	910
Service manager interest data	912
Action segments	914

← 900

Figure 9A

← 920

Service message header	922
Security segment	924
Fixed affinity	926
Affinity service precedence	928
Backup service precedence	929
Action segments	930
Identity information	932
Service manager interest data	934
Forwarding agent interest data	936
IP packet segment	938

Figure 9B

Service message header	941
Security segment	942
Action list segment	944
Affinity Segment. (from original affinity)	946
Identity information (from original affinity)	948
Service manager interest data	950
Forwarding agent interest data	952

← 940

Figure 9C

← 960

Service message header	962
Security Segment	964
Affinity, Identifier	966
Identity information (from original affinity)	968
Service manager interest data	970
Forwarding agent interest data	972
IP packet segment	974

Figure 9D

Service message header	982
IP packet segment	984

← 980

Figure 9E

1000 ↙

Dispatch Flag	1002
Information Flag	1004
Affinity key	1006
Interest mask	1008

Figure 10 A

1010 ↙

Search order Flag	1012
Precedence value	1014

Figure 10 B

1020 —

Service Manager Interest Data	1021
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Figure 10 C

1022 —

Forwarding Agent Interest Data	1023
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Figure 10 D

1024 —

IP address of sender	1025
Character host name	1026

Figure 10 E

← 1030

Source IP address	1032
Destination IP address	1034
Source port	1036
Destination port	1038

Figure 10 F

← 1040

Sequence delta	1042
Initial sequence number	1044
Acknowledgment delta	1046
Initial Acknowledgment number	1048

Figure 10 G

← 1050

Advertiser address	1052
Subnet mask	1054

Figure 10 H

← 1060

Interest IP Address	1062
Interest Port	1064
Interest Mask	1066
Data Flag	1067
Copy Flag	1068
Hold Flag	1069

1070

Action Type 1	1072
Action Type 2	1074
.	.
.	.
.	.
Action Type n	1080

Figure 10J

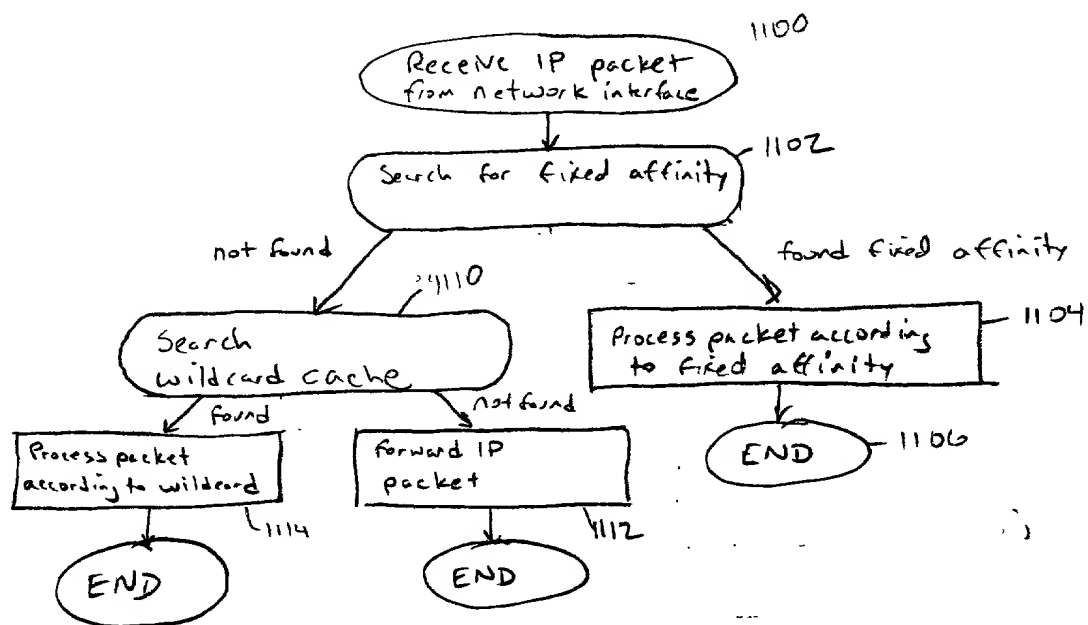


Figure 11

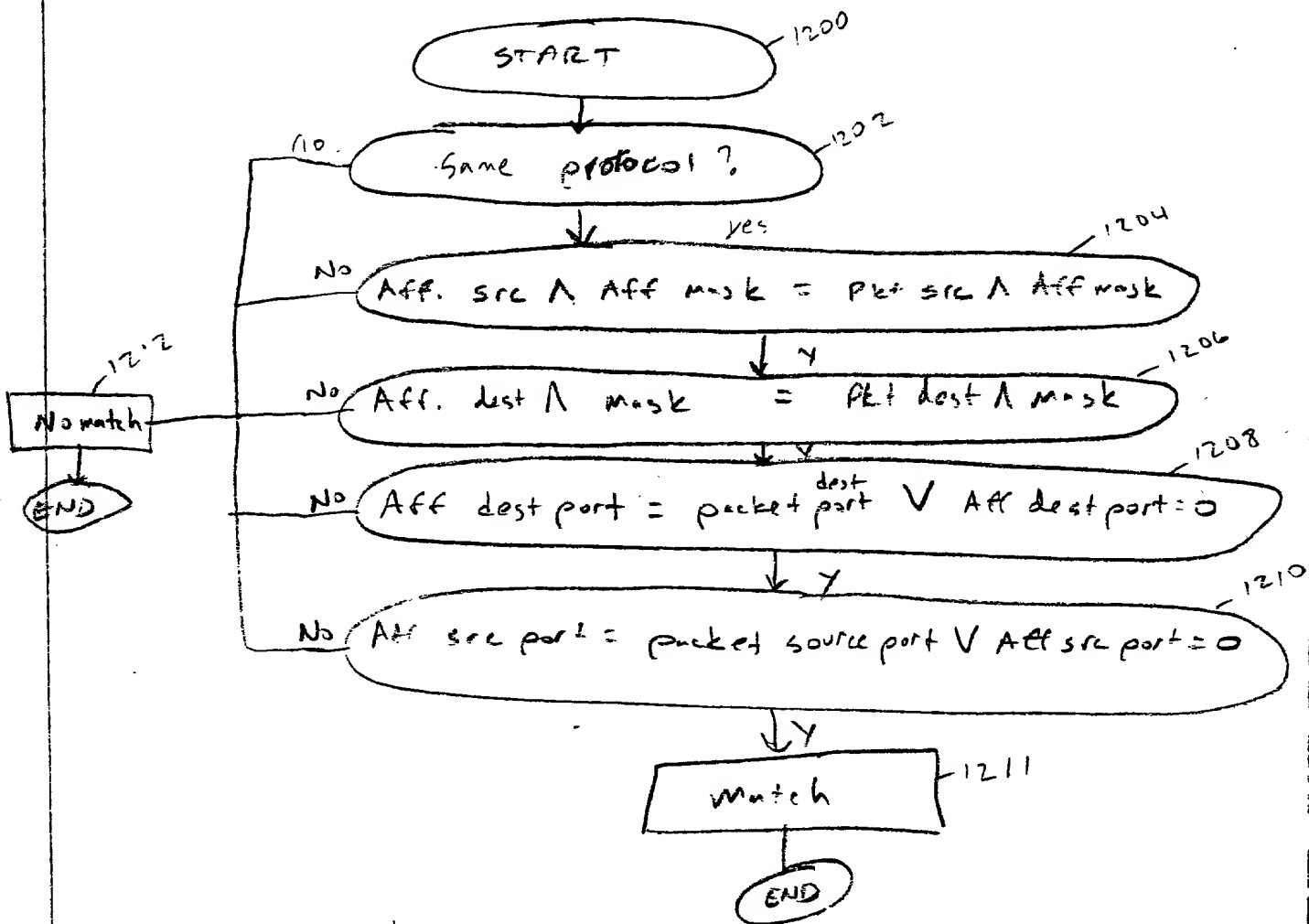


FIG. 12

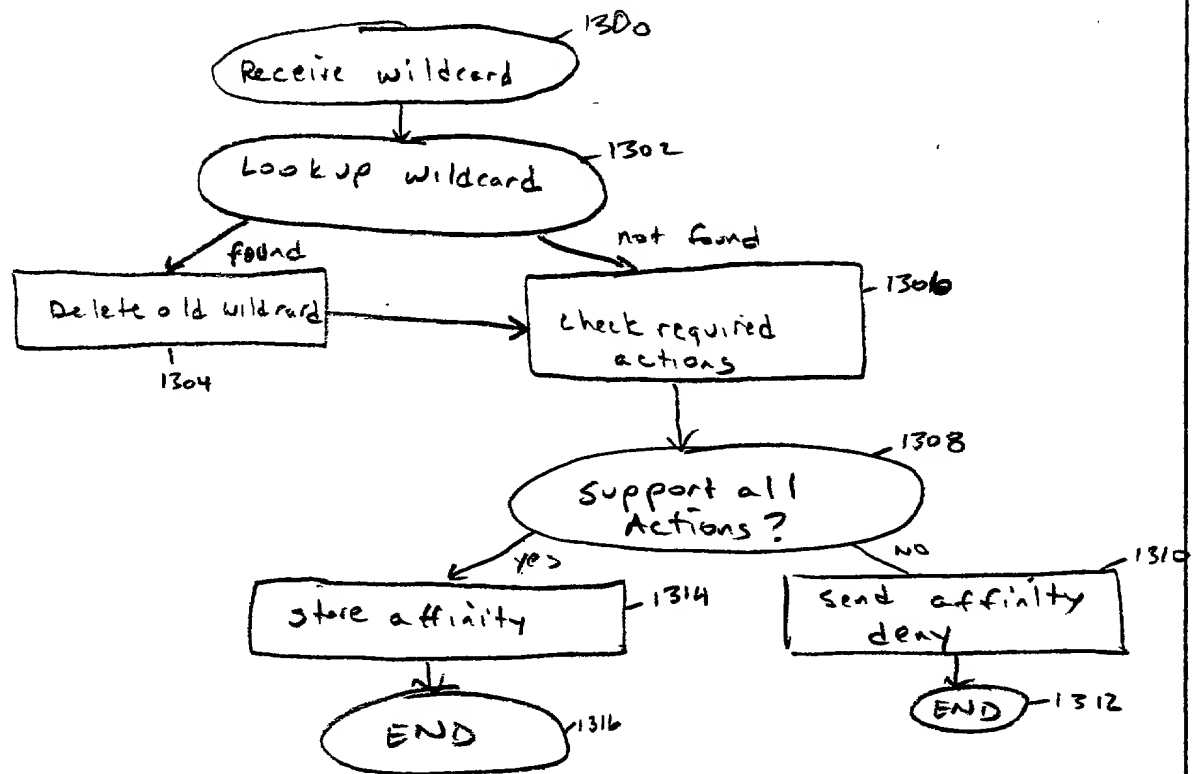


Figure 13

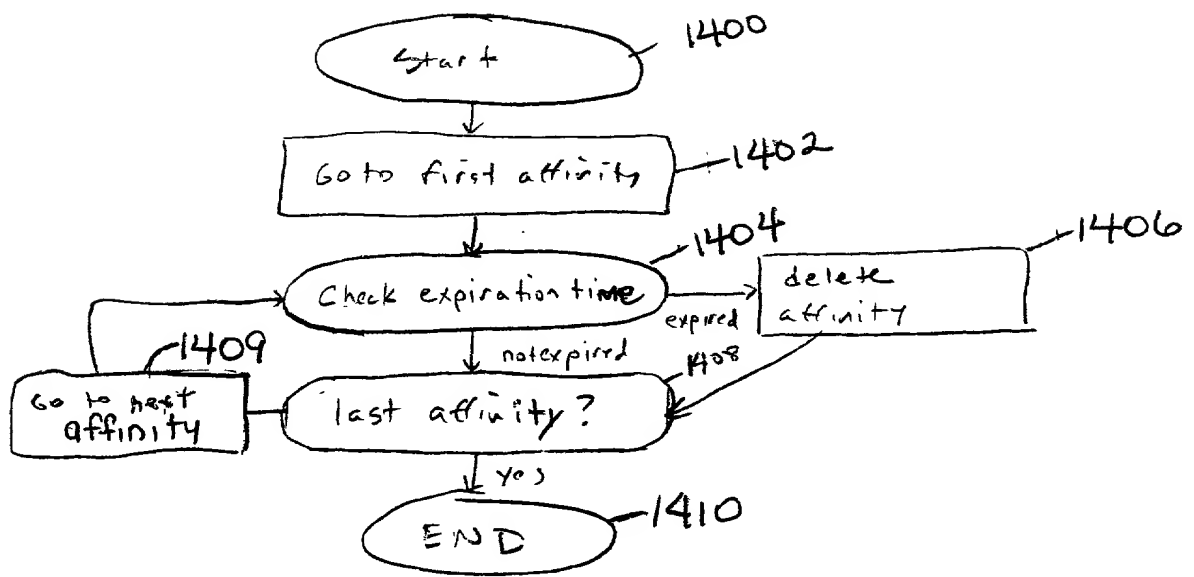


FIGURE 14

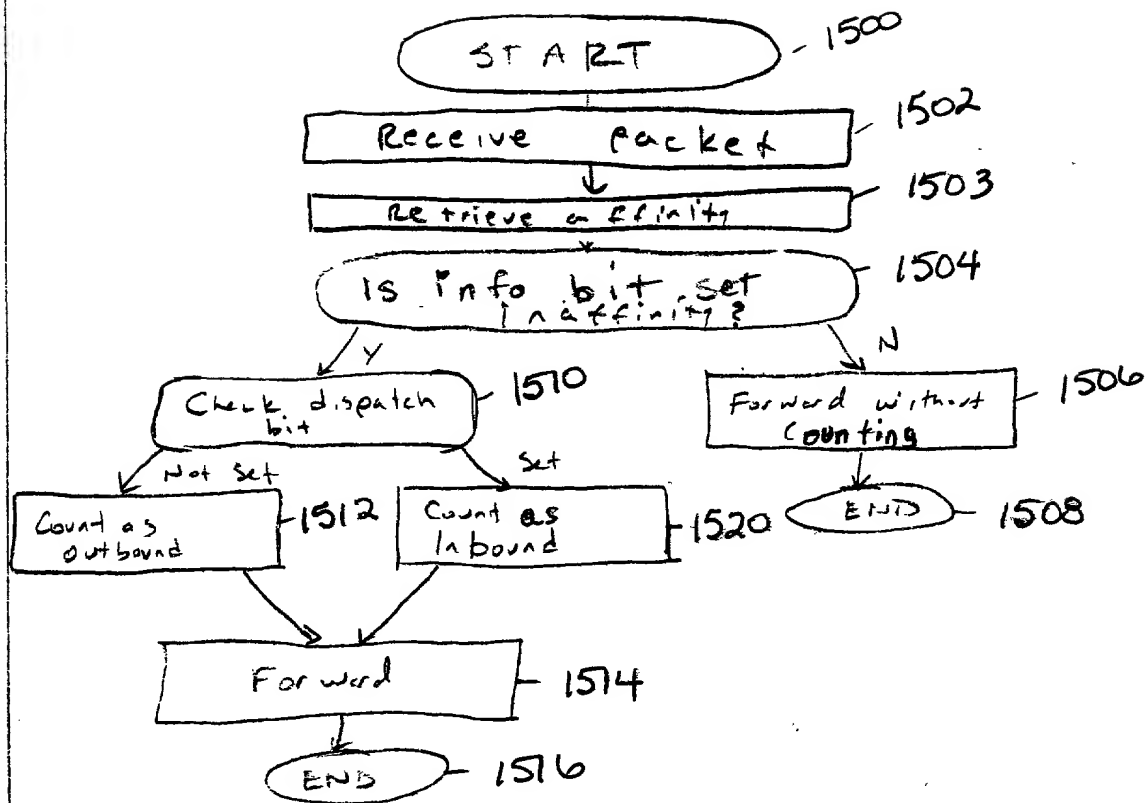


FIGURE 15

Forwarding Address	Info	Dispatch	Action
X	0	X	Dispatch
X	X	0	Count + out bound
X	X	X	Count in bound; Dispatch
0	X	X	Count, drop
0	0	X	Drop

FIGURE 16 A

NAT ADDRESS	Info	Dispatch	Action
X	X	X	Count Inbound
X	X	0	Count Outbound
X	0	—	Do not count

FIGURE 16 B

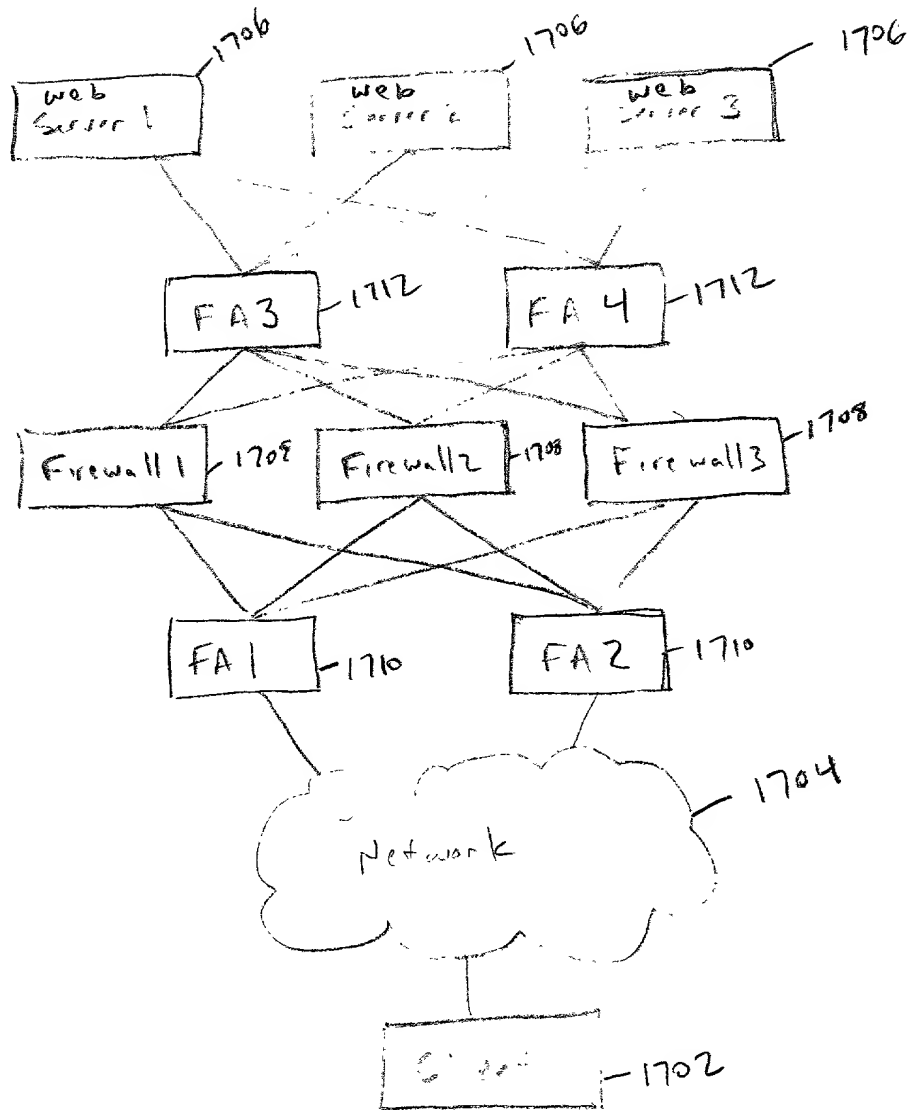


Figure 17

Tier 1 Forwarding agents
Forwarding Agent 1
Forwarding Agent 2

Figure 18 A

Tier 1 Appliances
Firewall 1
Firewall 2
Firewall 3

Figure 18 C

Tier 2 Forwarding Agents
Forwarding Agent 3
Forwarding Agent 4

Figure 18 B

Tier 2 Appliances
Server 1
Server 2
Server 3

Figure 18 D

Protocol
Client IP addr
Client Port
Server IP addr
Server Port
Tier 1 Server
...
Tier n Server

Figure 18 E

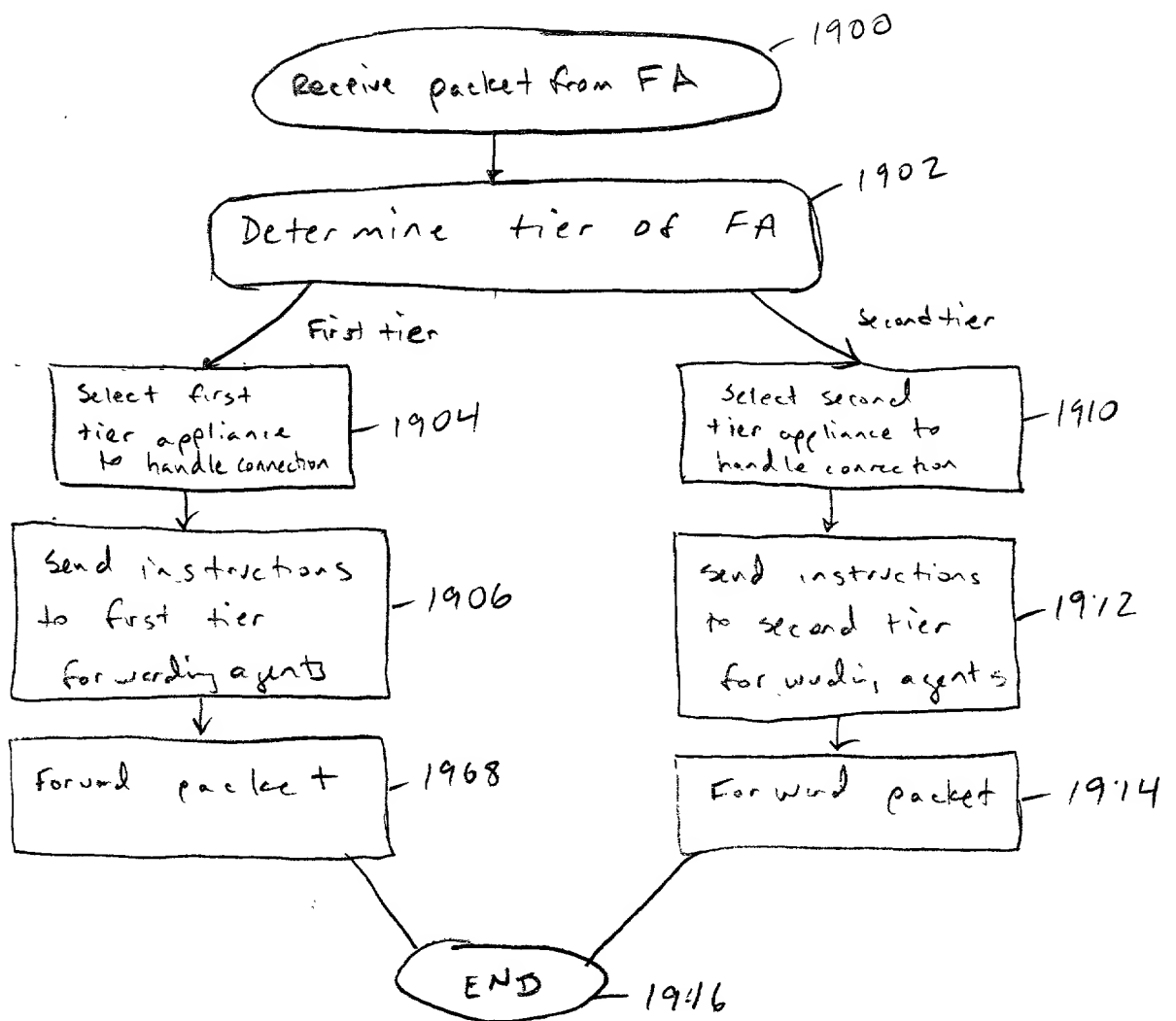


Figure 19

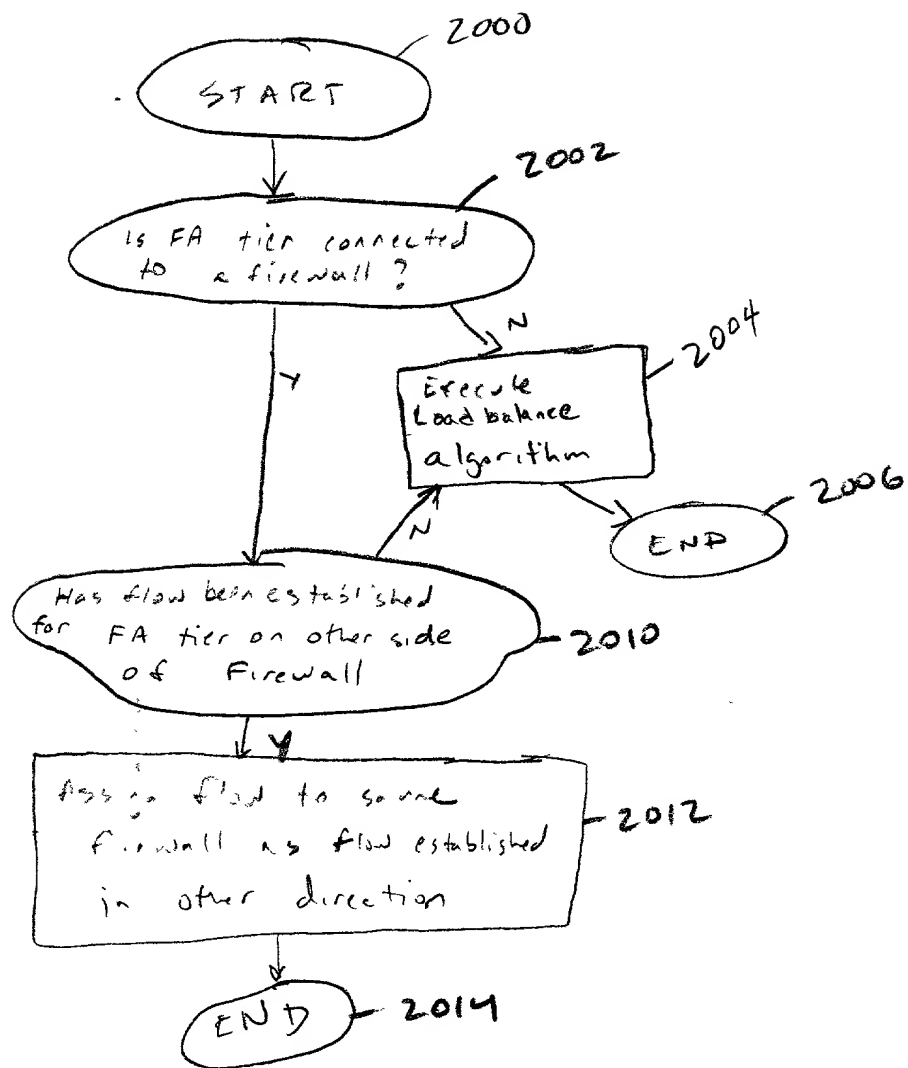


Figure 20